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EXAMINER	
SAUNDERS JR, JOSEPH	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/840,196	BAILEY, KELLY D.	
	Examiner	Art Unit	
	Joseph Saunders	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 – 3, 6, 8 – 13, 15, 16, 20, 21, and 25 – 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 – 3, 6, 8 – 13, 15, 16, 20, 21, and 25 – 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is the initial office action based on the communications filed May 6, 2004. Claims 1 – 3, 6, 8 – 13, 15, 16, 20, 21, and 25 – 34 are currently pending and considered below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 9 – 13, 15, 16, 20, 21, 25, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamoto (US 6,361,439 B1), hereinafter Kawamoto, in view of Okabe et al. (US 6,572,475), hereinafter Okabe, and Cascone et al. (US 6,959,094), hereinafter Cascone.

Claim 1: Kawamoto discloses a method for providing spatial sound data associated with a fast moving object (projectile) in a scene for a virtual environment, comprising: determining at least one of position, distance and direction for the object in regard to a point of view in the scene (Figure 2 Step 2); recording spatial sound data in at least two channels of an audio file associated with the object, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction of the object in regard to the point of view in the scene (Figure 2 Step 2 and Figure 3); and

playing the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data simulates sound associated with the object from the point of view in the scene (Figure 2 Step 4). Kawamoto does not disclose that the recorded spatial sound data includes spatial approaching sound data recorded in one channel and spatial retreating sound data in another channel of the audio file.

Okabe describes in chronological an example of the relationship between a display parameter and an audio parameter in a virtual game space wherein car A (fast moving object) passes the players car (fast moving object) during the game (Figure 7). Okabe illustrates that different sound effects including "the engine sound of car A becomes gradually higher (Doppler Effect)" and "the engine sound becomes gradually lower (Doppler Effect)" are linked to the position, distance, or direction of the cars within the virtual game space, i.e., "the image of car A behind appearing on the review mirror becomes larger" and "car a moves further ahead", respectively (Column 11 Lines 45 – 60). While Okabe also does not explicitly state that the sounds of "the engine sound of car A becomes gradually higher (Doppler Effect)" and "the engine sound becomes gradually lower (Doppler Effect)" are recorded with the Doppler effect, Cascone teaches that it is well known in the art of computer-implemented games and simulations involving vehicle sounds where, "one known technique for generating such vehicle sounds uses a set of digitized recordings of the vehicle's sound under a few specific conditions" and further teaches "In order for a game or simulation to allow for a variety of vehicle types, a very large number of recordings must be made under a large number

of different vehicle operating conditions, and all the recordings must be stored," Background of the Invention Column 1 Lines 20 - 57.

It is noted, that while Cascone goes on to teach processing sound by generating and/or synthesizing to reduce the memory storage space requirements by utilizing mixers and equalizers to independently control separate components of a sound, one of ordinary skill in the art at the time of the invention would recognize that if memory storage space is not a limiting factor than storing very large number of recordings is advantageous in reducing further processing. Further, even in the case where generating and/or synthesizing is utilized by Cascone the processing still relies on recorded sounds.

Therefore, given the teachings of Kawamoto of storing spatial sound data in at least two channels, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction; and given the example of Okabe of linking spatial approaching sounds and spatial retreating sounds to the position, distance, or direction of the cars within the virtual game space, in addition to the teachings of Cascone of using recorded sounds for different vehicle conditions; it would have been obvious to one of ordinary skill in the art at the time of the invention to use record the vehicle sounds as disclosed by Cascone necessary to produce the approaching and retreating Doppler effects as disclosed by Okabe by storing the sounds in at least two channels based on position as disclosed by Kawamoto, thereby realizing the claimed invention and aforementioned advantages.

Claim 2: Kawamoto , Okabe, and Cascone disclose the method of claim 1, wherein the point of view is at least one of a character in the scene, a third person perspective, and another character in the scene (Kawamoto, "listening position in virtual game space," Column 2 Lines 1 – 8, also Okabe, player's car, Figure 7).

Claim 9: Kawamoto, Okabe, and Cascone disclose the method of claim 1, further comprising mixing the spatial sound data in the at least two channels of the audio file based at least in part on distance, position and direction of the object in regard to at least in part the point of view and a type of the object (As the position of the car A changes in relationship to the position of the player's car in the example of Okabe, the combined invention of Kawamoto, Okabe, and Cascone plays back the recorded approaching and retreating Doppler effects according to position thereby mixing the spatial sound data).

Claim 10: Kawamoto, Okabe, and Cascone disclose the method of claim 9, but do not disclose wherein the mixing further comprises performing at least one of linear mixing, parametric mixing, and spectrum analyzer mixing. The office takes official notice that it is well known in the art that when mixing or equalizing sounds as disclosed by Cascone to use linear mixing, parametric mixing, and/ or spectrum analyzer mixing, with the use of equalizers during the mixing process to provide the benefit of boosting or cutting lows or highs during the mix. It would have been obvious to one of ordinary skill in the art at the time of the invention to use this type of mixing setup in the system of

Kawamoto, Okabe, and Cascone to thereby achieve the effect of attenuating high frequencies and amplifying low frequencies using a digital signal processor as disclosed by Kawamoto in Column 1 Lines 60 – 66.

Claim 11: Kawamoto, Okabe, and Cascone disclose the method of claim 9, wherein the mixing further comprises performing at least one of cross fading and blending of the at least two channels of the audio file ("cross-fade", Cascone Figure 5).

Claim 12: Kawamoto, Okabe, and Cascone disclose the method of claim 1, wherein the audio file further includes a format of at least one of Windows Audio Video (WAV), Audio Interchange File Format (AIFF), MPEG (MPX), Sun Audio (AU), Real Networks (RN), Musical Instrument Digital Interface (MIDI), QuickTime Movie (QTM), and AC3 (compressed MPEG AUDIO, Okabe Column 7 Lines 27 – 43).

Claim 13: Kawamoto, Okabe, and Cascone disclose method of claim 1, wherein the virtual environment is at least one of a video game, chat room, and a virtual world ("game", Kawamoto, Okabe, and Cascone).

Claim 15: Kawamoto discloses a method for playing spatial sound data associated with a fast moving object (projectile) in a scene for a virtual environment, comprising: recording sound data in at least two channels of an audio file based at least in part on distance, position and direction of an object in regard to a point of view in the scene

(Figure 2 Step 2 and Figure 3); and playing the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data is based at least in part on distance, position and direction of the object in regard to the point of view in the scene, and wherein the playing of the spatial sound data enables the simulation of sound associated with the object from the point of view in the scene (Figure 2 Step 4). Kawamoto does not disclose mixing spatial sound and further does not disclose wherein the spatial sound data includes spatial approaching sound data recorded in one channel of the audio file and spatial retreating sound data recorded in another channel of the audio file.

Okabe describes in chronological an example of the relationship between a display parameter and an audio parameter in a virtual game space wherein car A (fast moving object) passes the players car (fast moving object) during the game (Figure 7). Okabe illustrates that different sound effects including “the engine sound of car A becomes gradually higher (Doppler Effect)” and “the engine sound becomes gradually lower (Doppler Effect)” are linked to the position, distance, or direction of the cars within the virtual game space, i.e., “the image of car A behind appearing on the review mirror becomes larger” and “car a moves further ahead”, respectively (Column 11 Lines 45 – 60). While Okabe also does not explicitly state that the sounds of “the engine sound of car A becomes gradually higher (Doppler Effect)” and “the engine sound becomes gradually lower (Doppler Effect)” are recorded with the Doppler effect, Cascone teaches that it is well known in the art of computer-implemented games and simulations involving vehicle sounds where, "one known technique for generating such vehicle

sounds uses a set of digitized recordings of the vehicle's sound under a few specific conditions" and further teaches "In order for a game or simulation to allow for a variety of vehicle types, a very large number of recordings must be made under a large number of different vehicle operating conditions, and all the recordings must be stored," Background of the Invention Column 1 Lines 20 - 57.

It is noted, that while Cascone goes on to teach processing sound by generating and/or synthesizing to reduce the memory storage space requirements by utilizing mixers and equalizers to independently control separate components of a sound, one of ordinary skill in the art at the time of the invention would recognize that if memory storage space is not a limiting factor than storing very large number of recordings is advantageous in reducing further processing. Further, even in the case where generating and/or synthesizing is utilized by Cascone the processing still relies on recorded sounds.

Therefore, given the teachings of Kawamoto of storing spatial sound data in at least two channels, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction; and given the example of Okabe of linking spatial approaching sounds and spatial retreating sounds to the position, distance, or direction of the cars within the virtual game space, in addition to the teachings of Cascone of using recorded sounds for different vehicle conditions; it would have been obvious to one of ordinary skill in the art at the time of the invention to use record the vehicle sounds as disclosed by Cascone necessary to produce the approaching and retreating Doppler effects as disclosed by Okabe by storing the

sounds in at least two channels based on position as disclosed by Kawamoto, thereby realizing the claimed invention and aforementioned advantages.

Claim 16: Kawamoto discloses a server (game machine) for enabling the playing of spatial sound data associated with a fast moving object (projectile) in a scene in a virtual environment (Figure 1), comprising: a memory (audio data memory unit 3) for storing data; and an audio engine (main controller 1) for performing actions, including: enabling the determining of at least one of position, distance and direction for the object based at least in part on a point of view in the scene and a type of the object (Figure 2 Step 2); enabling the recording of spatial sound data in at least two channels of an audio file associated with the object, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction of the object; (Figure 2 Step 2 and Figure 3) and enabling the playing of the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data simulates sound associated with the object from the point of view in the scene (Figure 2 Step 4).

Kawamoto does not disclose that the recorded spatial sound data includes spatial approaching sound data recorded in one channel and spatial retreating sound data in another channel of the audio file.

Okabe describes in chronological an example of the relationship between a display parameter and an audio parameter in a virtual game space wherein car A (fast moving object) passes the players car (fast moving object) during the game (Figure 7).

Okabe illustrates that different sound effects including “the engine sound of car A becomes gradually higher (Doppler Effect)” and “the engine sound becomes gradually lower (Doppler Effect)” are linked to the position, distance, or direction of the cars within the virtual game space, i.e., “the image of car A behind appearing on the review mirror becomes larger” and “car a moves further ahead”, respectively (Column 11 Lines 45 – 60). While Okabe also does not explicitly state that the sounds of “the engine sound of car A becomes gradually higher (Doppler Effect)” and “the engine sound becomes gradually lower (Doppler Effect)” are recorded with the Doppler effect, Cascone teaches that it is well known in the art of computer-implemented games and simulations involving vehicle sounds where, "one known technique for generating such vehicle sounds uses a set of digitized recordings of the vehicle’s sound under a few specific conditions” and further teaches “In order for a game or simulation to allow for a variety of vehicle types, a very large number of recordings must be made under a large number of different vehicle operating conditions, and all the recordings must be stored," Background of the Invention Column 1 Lines 20 - 57.

It is noted, that while Cascone goes on to teach processing sound by generating and/or synthesizing to reduce the memory storage space requirements by utilizing mixers and equalizers to independently control separate components of a sound, one of ordinary skill in the art at the time of the invention would recognize that if memory storage space is not a limiting factor than storing very large number of recordings is advantageous in reducing further processing. Further, even in the case where

generating and/or synthesizing is utilized by Cascone the processing still relies on recorded sounds.

Therefore, given the teachings of Kawamoto of storing spatial sound data in at least two channels, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction; and given the example of Okabe of linking spatial approaching sounds and spatial retreating sounds to the position, distance, or direction of the cars within the virtual game space, in addition to the teachings of Cascone of using recorded sounds for different vehicle conditions; it would have been obvious to one of ordinary skill in the art at the time of the invention to use record the vehicle sounds as disclosed by Cascone necessary to produce the approaching and retreating Doppler effects as disclosed by Okabe by storing the sounds in at least two channels based on position as disclosed by Kawamoto, thereby realizing the claimed invention and aforementioned advantages.

Claim 21 is substantially similar in scope to claim 16 and therefore rejected on the same grounds.

Claims 20 and 25 are substantially similar in scope to claims 9 and therefore are rejected on the same grounds.

Claim 26 is substantially similar in scope to claims 1, 15, 16 and 21 and therefore rejected on the same grounds.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto, Okabe, and Cascone in view of Nakagawa (US 6,760,050 B1), hereinafter Nakagawa.

Claim 3: Kawamoto, Okabe, and Cascone disclose the method of claim 1, but do not disclose the method further comprising determining a type of the object based at least in part on the point of view in the scene. Nakagawa discloses a method of producing sound in a virtual environment and discloses determining the type of object based in part on the coordinates and then uses the type, for example a sound-reflecting object or wall, and the coordinates to generate the appropriate sound data (Figure 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the steps taught by Nakagawa into the invention of Kawamoto, Okabe, and Cascone thereby allowing for sounds particular to a respective object to be audible from prescribed positions and from prescribed directions (Column 14 Lines 48 – 64).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto, Okabe, and Cascone in view of Jahnke (US 2005/0179701), hereinafter Jahnke.

Claim 8: Kawamoto, Okabe, and Cascone disclose the method of claim 1, but do not disclose wherein the spatial approaching sound data is played in one sound amplification device and the spatial retreating sound data is played in another sound

amplification device. Jahnke discloses, "The first characteristic of high performance game systems is a positional audio scheme. A positional audio system performs dynamic channel gain/attenuation based on the user input and character perspective on a screen in real time. Multi-channel speaker systems typically include five main speakers, a front left, center, and front right speaker, plus a rear left and a rear right speaker. Such systems also include a separate subwoofer, which is a non-positional speaker for bass reproduction. Such an audio system with five main speakers and sub-woofer is referred to as a `5.1 level` system," [0004]. Therefore, given that Okabe discloses, "the image of car A behind appearing on the review mirror becomes larger" and "car a moves further ahead", it would have been obvious to one of ordinary skill in the art at the time of the invention to use a 5.1 level system as disclosed by Jahnke and mix the approaching sounds of Kawamoto, Okabe, and Cascone to the Rear Center 607, Figure 6 of Jahnke, and the retreating sounds to the Center 602, thereby allowing for a heightened sense of realism.

6. Claims 6, 27, 30 – 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto in view of Gehring (US 5,521,981), hereinafter Gehring.

Claim 6: Kawamoto discloses a method for providing spatial sound data associated with a object (projectile) in a scene for a virtual environment, comprising: determining at least one of position, distance and direction for the object in regard to a point of view in the scene (Figure 2 Step 2); recording spatial sound data in at least two channels of an

audio file associated with the object, wherein the recorded spatial sound data is based at least in part on at least one of position, distance, and direction of the object in regard to the point of view in the scene (Figure 2 Step 2 and Figure 3); and playing the spatial sound data in at least one of the at least two channels of the audio file associated with the object, wherein the playing of the spatial sound data simulates sound associated with the object from the point of view in the scene (Figure 2 Step 4).
Kawamoto does not disclose that the object is directional and further recording spatial forward sound data in one channel of the audio file and recording spatial rearward sound data in another channel of the audio file.

Gehring discloses that in a three-dimensional video game (Column 3 Line 27) it is advantageous to record preprocessed versions of sound from different directions and then based on positional coordinated form an application mix the appropriate sounds so as to be perceived by the listener as coming from specified three-dimensional spatial locations, thereby providing an economical solution by reducing processing requirements (Abstract, Figures 3 – 5 and correspond descriptions). Therefore, given the discloser of Gehring, it would have been obvious to record forward and rearward directional sound in the invention of Kawamoto, thereby allowing for the realism of a three-dimensional video game with economical advantages.

Claim 27: Kawamoto and Gehring disclose the method of claim 6, wherein the point of view is at least one of a character in the scene, a third person perspective, and another

character in the scene (Kawamoto, "listening position in virtual game space," Column 2 Lines 1 – 8).

Claim 30: Kawamoto and Gehring disclose the method of claim 6, further comprising mixing the spatial sound data in the at least two channels of the audio file based at least in part on distance, position and direction of the object in regard to at least in part the point of view and a type of the object (Gehring, Figures 3 - 5).

Claim 31: Kawamoto and Gehring disclose the method of claim 30, but do not disclose wherein the mixing further comprises performing at least one of linear mixing, parametric mixing, and spectrum analyzer mixing. The office takes official notice that it is well known in the art that when mixing or equalizing sounds as disclosed by Gehring to use linear mixing, parametric mixing, and/ or spectrum analyzer mixing, during the mixing process to provide the benefit of boosting or cutting lows or highs during the mix. It would have been obvious to one of ordinary skill in the art at the time of the invention to use this type of mixing setup in the system of Kawamoto and Gehring to thereby achieve the effect of attenuating high frequencies and amplifying low frequencies using a digital signal processor as disclosed by Kawamoto in Column 1 Lines 60 – 66.

Claim 32: Kawamoto and Gehring disclose the method of claim 30, wherein the mixing further comprises performing at least one of cross fading and blending of the at least

two channels of the audio file (adjusting volume setting percent to "move" sounds, Gehring Figure 5).

Claim 33: Kawamoto and Gehring disclose the method of claim 6, wherein the audio file further includes a format of at least one of Windows Audio Video (WAV), Audio Interchange File Format (AIFF), MPEG (MPX), Sun Audio (AU), Real Networks (RN), Musical Instrument Digital Interface (MIDI), QuickTime Movie (QTM), and AC3 (MIDI, Gehring Column 2 Lines 23 – 25).

Claim 34: Kawamoto and Gehring disclose method of claim 6, wherein the virtual environment is at least one of a video game, chat room, and a virtual world ("game", Kawamoto).

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto and Gehring in view of Nakagawa.

Claim 28: Kawamoto and Gehring disclose the method of claim 6, but do not disclose the method further comprising determining a type of the object based at least in part on the point of view in the scene. Nakagawa discloses a method of producing sound in a virtual environment and discloses determining the type of object based in part on the coordinates and then uses the type, for example a sound-reflecting object or wall, and the coordinates to generate the appropriate sound data (Figure 3). Therefore, it would

have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the steps taught by Nakagawa into the invention of Kawamoto and Gehring thereby allowing for sounds particular to a respective object to be audible from prescribed positions and from prescribed directions (Column 14 Lines 48 – 64).

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto, Okabe, and Cascone in view of Jahnke.

Claim 29: Kawamoto and Gehring disclose the method of claim 6, but do not disclose wherein the spatial frontward sound data is played in one sound amplification device and the spatial rearward sound data is played in another sound amplification device, since. Jahnke discloses a very similar technique to Gehring, however instead of only two channels being present, 5.1 channels are present and the volume of recorded sounds is adjusted appropriately for each channel. Jahnke discloses, "The first characteristic of high performance game systems is a positional audio scheme. A positional audio system performs dynamic channel gain/attenuation based on the user input and character perspective on a screen in real time. Multi-channel speaker systems typically include five main speakers, a front left, center, and front right speaker, plus a rear left and a rear right speaker. Such systems also include a separate subwoofer, which is a non-positional speaker for bass reproduction. Such an audio system with five main speakers and sub-woofer is referred to as a `5.1 level` system," [0004]. Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to use a 5.1 level system as disclosed by Jahnke in the invention of Kawamoto and Gehring, thereby allowing for a heightened sense of realism without the need of headphones.

Response to Arguments

9. Applicant's arguments, see p. 8 – 10, filed February 13, 2008, with respect to the rejection(s) of claim(s) 1 – 26 under 35 U.S.C. 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of new references to Okabe et al., Cascone et al., Gehring, and Jahnke as presented in the 35 U.S.C. 103 rejections above.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 2615

/Sinh N Tran/
Supervisory Patent Examiner, Art Unit 2615